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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/615,834 | 07/10/2003 | Jong-Woo Kim | 053785-5018-01 | 8923 |
| 9629 | 7590 | 04/05/2005 | EXAMINER | |
| MORGAN LEWIS & BOCKIUS LLP 1111 PENNSYLVANIA AVENUE NW WASHINGTON, DC 20004 | | | CHUNG, DAVID Y | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2871 | |

DATE MAILED: 04/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/615,834

Applicant(s)

KIM ET AL.

Examiner

David Y. Chung

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-28 is/are pending in the application.
- 4a) Of the above claim(s) 20-25 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18, 19 and 26-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/885,527.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 18, 19 and 26-28 rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (U.S. 6,255,130) in further view of Akamatsu et al. (U.S. 6,414,730).

As to claims 18 and 26, Kim discloses a thin film transistor array panel in figures 1-3. Note the substrate 10 and the first metal layer comprising: the gate line 22, gate pad 24, gate electrode 26, and first capacitor electrode 28. An insulating layer 30 covers the first metal layer and a contact hole 72 is formed to uncover the gate pad. A silicon layer 42 is formed on insulating layer 30. A second metal layer disposed on the silicon layer comprises: data line 62, data pad 64, source electrode 65, drain electrode 66, and second capacitor electrode 68. A passivation layer 70 covers the second metal layer. See columns 7 and 8.

Kim does not disclose exposing a side edge portion of the drain electrode and silicon layer and forming the pixel electrode such that it contacts the side edge portion

of the drain electrode and silicon layer. Akamatsu et al. discloses a conventional liquid crystal display device in figure 14A that has the same contact structure between the pixel electrode and drain electrode that is disclosed by Kim. Akamatsu et al. teaches that when only the inside of the surface of a drain electrode is exposed at the bottom of a through hole, disconnection of the transparent conductive film can occur due to side etching as illustrated in figures 15 and 16. See column 9, line 61 – column 10, line 3. Akamatsu et al. teaches forming a contact hole 87 by completely etching through the insulating layer over a region where the drain electrode is formed and over a region where the drain electrode is not formed, as shown in figure 8. See column 10, lines 3-10. Akamatsu et al. teaches that forming such a contact hole can prevent the aforementioned disconnection, allowing for a reliable connection between the pixel electrode and drain electrode. See column 10, lines 16-28. It would have been obvious to one of ordinary skill in the art at the time of invention to form the contact hole disclosed by Akamatsu et al. in the device of Kim in order to form a more reliable electrical connection between the pixel electrode and the drain electrode. This type of contact hole would have exposed a side edge portion of both the drain electrode and silicon layer in the device of Kim.

As to claims 19 and 27, figure 1 of Kim shows the source electrode 65 connected to the data line 62, the drain electrode 66 spaced apart from the source electrode 65, the second capacitor electrode 68 disposed over the first capacitor electrode 28, and

the data pad 64 connected to the first end of data line 62. Figure 3 shows the source electrode 65 and drain electrode 66 disposed on the active layer.

As to claim 28, figure 2 shows a data pad contact hole 73 and a capacitor contact hole 74 formed in the passivation layer uncovering corresponding portions of the data pad 64 and second capacitor electrode 68, respectively.

Response to Arguments

Applicant's arguments filed January 4, 2005 have been fully considered but they are not persuasive. Although Akamatsu et al. does not explicitly teach exposing a side edge portion of the silicon layer, modifying the device of Kim in the manner taught by Akamatsu et al. would have resulted in a side edge portion of the silicon layer being exposed.

Conclusion

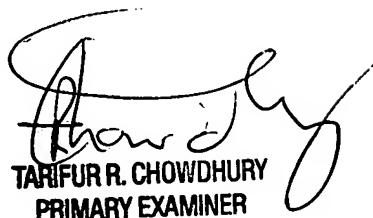
Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Chung whose telephone number is (571) 272-2288. The examiner can normally be reached on Monday-Friday from 8:30 am to 5:00 pm.



TARIFUR R. CHOWDHURY
PRIMARY EXAMINER

David Chung
GAU 2871
04/01/05